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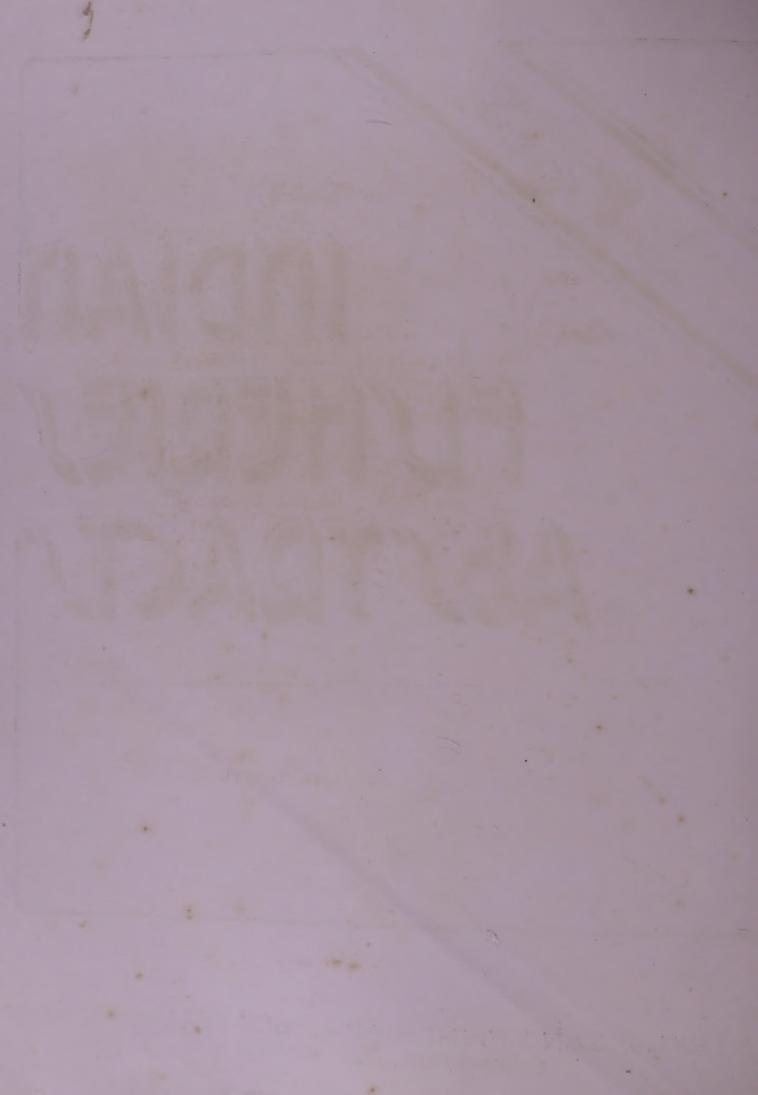
# INDIAN FISHERIES ABITRACTI



Nos. 1 & 2 Volume 20

January-June 1981

ENTRAL INLAND FISHERIES RESEARCH INSTITUTE BARRACKPORE, WEST BENGAL



## INDIAN FISHERIES ABSTRACTS

(Formerly Bibliography of Indian Fisheries)

Volume: 20 No.1 & 2

January-June, 1981

Compiled

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Abstracted

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Bibliography

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## INDIAN FISHERIES ABSTRACTS (Indian Fish. Abstr.)

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Achari, G.P. Kumaraswami (1975)

(Central Marine Fisheries Research Sub-station, Vizhingum). Studies on new or little known polychaetes from the Indian seas.4. On a new record of Sigambra tentaculata (Treadwell) (Pilargidae) from the Southwest Coastof India along with observations on its early larval stages. J.mar.biol.Ass.India, 17(2): 238-241.

Achuthankutty, C.T., S.R. Sreekumaran Nair, V.P. Devassy and Vijaya lakshmi R.Nair. (National Institute of Oceanography, Dona Paula-403004, Goa). Plankton composition in two estuaries of the Konkan coast-during pre-monsoon season. Mahasagar 14(1): 55-60.

...12 ref.

Agrawal, Nirupama and Hridaya Sharkar Singh (1981). (Zoology Department, Lucknow University, Lucknow). On a rare trematode Transversotrema chauhani N.sp., from a freshwater fish, Nandus Curr.Sci.50(9): 426-427. nandus (Ham.)

.. 6 ref.

Agrawal, N.K. and C.L. Mahajan (1980). (Aquatic and Fish Biology Laboratory, Dept. of Zoology, University of Rajasthan, Jaipur 302004). Hematological changes due to vitamin C deficiency in Chamna punctatus (Bloch). The Journal of Nutrition 110(11):2172-2181 ... 36 ref.

Anand, S.P. (1980). (National Institute of Oceanography, Dona Paula, Goa-403004). A solar dryer for marine cu-farm products. Mahasagar : 13(4): 383-384

- 6 Aranjo, Alberto, Joe D'Souza and A.A. Karande (1981). (1 Goa College of Pharmacy, Panaji, Goa-403001,
  - 2 Centre of Post-Graduate Instruction & Research (University of Bombay), Panaji, Goa-403001,
  - 3 Naval Chemical and Metallurgical Laboratory, Tiger Gate, Bombay 400 023).

Phosphorus solubilization by some marine fungi.
Mahasagar 14(1): 67-70.

Ten marine fungi were qualitatively screened for phosphorus solubilizing ability. A maximum amount of 18% phosphorus was obtained in the culture filtrate and about 54% phosphorus was found in the total cell mass with lenicillium funiculosum.

... 6 ref.

7 Baksalary, J.K. and R.Kala (1980).

(Academy of Agriculture, Paland).
On the difference between two second degree polynomials each following a chi-square distribution.

Sankhya, The Indian Journal of Statistics 42, Series A (Pts 1 & 2) 123-127.

Necessary and sufficient conditions are established for the difference between two second degree polynomial statistics, each following a chi-square distribution.

... 3 ref.

8 Banerjee, R.K. and P.Ray (1980).

· 2 1 5.45

(Calcutta Research Centre of CIFRI, 47/1 Strand Road, Calcutta).

Payapranalir jale matsya chasera bivinmya jibanu O rasaya ik paderther sackriya bhumica abong tader bijnanvithic niyantran (in Bengali) (The active role of various bacterial and chemical articles in drain water fish culture and their control in Scientific line).

In Paribesh dile machhe varipye deoya jaya, ed. by F. Ghosh, Calcutta, Chabbish Pangana Fish Fish Producers' Association).

9 Barrackpore, Central Inland Fisheries Research Institute (1980)

Fifth Workshop on All India Coordinated Research Project on Composite Fish Culture and Fish Seed Production (Progress Report of Kausalyagang, Sub-centre Orissa for the period October 1978 to August 1980). Discussed all important aspects

regarding Composite Fish culture.

10 Barrackpore, Central Inland Fisheries Research
Institute (1980)
Summer Institute on Brackishwater
Capture and culture Fisheries,
Barrackpore, 3 July-2 August, 1980.
Lectures of important capture and
culture fishery aspects of brackishwater are compiled.

Preliminary observations on induced breeding of Indian major carp (Labeo robita).

The Phillipine Journal of Fisheries 16(1): 25-37.

A dose of 1.5/body wt.was highly effective. Uniformly ideal water temperature can help the process.

Bhattathiri, P.M.A., V.P.Deyassay & K.Radhakrishna 1980.
(National Institute of Oceanography,
Dona Paula, Goa-403004).

Primary production in the Bay of Bengal
during South West monsoon of 1978.
(Mahasagar, 13(4):315-323.

Crachago 3-5

13 Bhowmick, R.M., R.K. Jana, S.D. Gupta, G.V. Kowtal and M. Rout 1981.

(CIFRI Cuttack, Orissa).
Studies on some aspects of biology and morphometry of the intergeneric hybrid, Catla catla Hamilton x Labeo rohita Humilton produced by hypophysation.

Aquaculture, 23: 367-371(1-4)

A catla-rohu hybrid produced by hypophysation was found to be intermediate in general appearance to the parent species. Comparison of selected morphometric measurements of parents and progeny was made and the result is presented.

10 ref.

14 Biswas, S. 1980. (Zoological survey of India, Calcutta)
Cladocerans (crustacea : Branchiopoda)
from Assam and adjacent hill states
in North East India.

Rec. Zool. Surv. India 76(1-4): 93-113.

24 species of cladocerons have been

identified.

... 13 ref.

15 Bombay, Central Institute of Fisheries Education, 1981.

Seminar on Aspects of Inland Fisheries.

CIFE Newsletter V issue, February,

22nd 1981, 1-93.

Discussed aspects like reservoir fisheries, culture of eels in Manipur, Biochemical composition of freshwater teleost; composite fish farming, Fisheries of Ladak.

16 Boralkar, D.B., R.K. Trivedy and A.Y. Kulkarni 1981.

(Dept. of Pollution Science College, Karad 415110).

Studies on salt buildup in Krishna river, Maharashtra State.

Acta Limno Indica, 1(1): 5-9.

an increase in the salt build up at an alarming rate within a very short distance of about 260 km. Significance of the findings is discussed.

17 .D. Chakraborty, F.R. Sen, N.G.S. Rao, S.R. Ghosh, S. Jena and K. Janakiran 1980 (CIFR. Substation

Observations on intensive composite 

Proc. Indo-Pacif Fish Council 19th Session Kyotol Japan, 21-30 1980 : 515-525.

Chanchal, A.K., B.N. Pandey and S. B. Singh 1979 (Dept. of Zoology, Gaya College, Gaya, Bihar). Seasonal variations in oxygen consumption of Anabas testudineus Bloch. Proc. Nat. Acad. of the day of the order of the state of the

Jakath a for para dan A good correlation has been found between the cylic changes in Vo2 and seasonal fluctuations in water temperature and day length. The possible reason for changes in oxygen consumption with respect to sex, season and environmental factors are discussed
17 ref.

(Department of Fishery Biology College of Fisheries, Mangalore, India) Conservation techniques in fisheries Management A review. Scafd. export, J. 12(11): 9-12

The urgent need of farming and legis lating national conservat on policy in te Indian lisheries is emphasised in view of) the present imperfection in this context towards a rational exploitation of fishery wealth. 

The state of the s

4 ref.

20 Chattopadhyay G.N. and L.N. Mandal (1980).

. (martid .

1 CIFRI Barrackpore, West Bengal, India 2 Dept. of Agric 1 tural Chemistry and Soil Science, Bidhan Chandra Agricultural University, West Bengal, India. Effect of different levels of water salinity on the decomposition of organic manures in a brackishwater fish pond soil.

Hydrobiologia 72(3): 287-292.

levels on the decomposition of the two organic manures cowdung and poultry manure were studied under laboratory condition. Decomposition is comparatively lower under higher water salinity levels hence well decomposed manures are diviceable for brackishwater condition.

... 14 ref.

Chattopadhyay, G.N. and L.N. Mandal 1980.

(Rahara Research Centre of CIFRI
8 Station Road, Rahara, 24-Parganas).

Inorganic transformation of applied phosphorus in brackishwater fish pond soil under different water salinity levels.

Hydrobiologia, & 71(1-2): 125-130.

Cletty, C. Sreeramulu R. Chandramoha Naidu, W. Rajendra and K. S. Swami (1981).

(Dept. of Zoology, Govt. of College, Anantapur).

On the occurrence of arginase in the muscle and its role in various tissues of frog Rana hexadactyla, during deneration atrophy and chronic ammonia toxicity.

Curr. Sci. 50(2): 71-73.

The similarity in the pattern of arginase response to surgical denervation and imposed ammonia toxicity has been studied.

23 Daniel A & J.K. Sen 1975.

(Zoological survey of India.

Cochin).

Studies on the Pycnogonids from the collections of the Zoological Survey of India, Calcutta, together with notes on their distribution in the Indian Ocean.

J. Mer. biol. Ass. India, 17(2): 160-167.

The systematics, ecology and distribution of all the 23 species are dealt with. An attempt has been made to explain the distribution taking into consideration the prevailing oceanic currents and bottom topography. raphy. Programme to the state of the state o

24 Daniel, A. and S. Krishnan 1978.

Marine Biological Station, of mois Zoological Survey of India, Madras). A. parthenopid crab Zebrida adamsii white 1847 inhabiting interspaces of spines of the sea Urchin, Salmacis virgulata L. Agassiz. 1846. • Bull. Zool. Surv. India, 1(2):171-175.

Association of a parthenopid crab, Zebria adamsii White with the echinoid Salmacis virgulata L. Agassiz, existing at 18-20 metre depth along the Madras Sea coast is reported.

12 ref.

25 Das P.K. and C.B.L. Srivastava 1980. Her

somming up 11 . Dept. of Zoology, HS. Cl.S. College Puri, Orissa.

2 Dept. of Zoology, Allahabad University, 

Sensory nerve transection in the lateral - line system of three Indian fishes.

Nat. Acad. Sci. Letters 3(3):99-101.

Details about the nerve and the technique of nerve transaction have been described. 26 Das Sumita, B.K. Sharma and R. George Michael 1981.

Dept.of Zoology North Eastern
Hill University, Shillong 793014
Meghalaya

Laboratory studies on the longerity inster duration and growth of the

male of <u>Daphnia Pumholtzi</u> Sars (Cladocera Daphin dae). <u>Curr. Sci. 50(4)</u>:p 200-

Most descriptions of cladocera are based on the study of parthenogenetic females. Hence the present study is of interest.

ref

27 Datta Munshi, J.S., J, Ojha, & Ashal Sinha 1980.

Post Graduate Dept. of Zoology, Bhagalpur
University, Bhagalpur 812007

Morphometrics of the respiratory organs
of an air-breathing catfish Clarias
batrachus (Linn.) in relation to body weight.

Proc. Indian natn. Sci. Acad. B. 46(5):621-635.

...20 ref

28 David, A., K. V. Rajagopal & K. Gopinathan 1979.

1 Tank Fisheries Research Unit of CIFRI 3rd Floor, Multistoried Building, Bangalore-1

- Fisheries College, Mangalore-2, Karnataka, India
- Pulicat lake unit of the 6IFRI, Tamilnadu, India.

  Breeding of fishes seasonal abundance of young and forage fishes within the Tungabhadra Reservoir.

  Proc. Nat. Acad. Sci. India 49B(4): 183-195.

...25 ref

29 De ladrai, P. V. (1980). ... I India Coord nated Research

Project on Air-breathing Fish Culture, CIFRI (ICAR), Barrackpore, India

Advances in air-breathing fish culture in India.

Proc. Indo-Pacif Fish. Council, 19th
Session Kyoto, Japan. 21-30 May, 1980
508-514.

Describes experimental projects in India or air-breathing fish culture. All aspects of this fish culture are described.

12 miles to de 10 miles to 10 miles

30 Dehadrai, P. V. (1980).

Swamp ecology and scope for its utilisation for aquaculture in India.
In tropical Ecology and Development:
Proceedings of the Vth International
Symposium of Tropical Ecology, 16-21
April, 1979, Kuala Lumper, Malaysia,
Part 2, ed by J.I.Furtado Kualampur
The International Society of Tropical
Ecology: 823-832.

31 Deshmukh R. A. 1979.

(Yashwantrao Monite College, Brandwane, Poona, 411004, India). On three new species of <u>Unitibilocularis</u> Southwell, 1925 (Cestoda: Onchobothiidae) from marine fishes with a key to the species of the Genus. <u>Proc. Nat. Acad. Ci. India</u> 49B(4):227-236.

12 ref

32 Dharma Raja S.K. and T. Jacob (1980).

Central Marine Fisheries Research
Institute, Cochin, India.
Impact of the introduction of commercial
purse seine operations on the traditional
fisheries of the Karnataka coast in India
Proc.Indo.Pacif Fish.Council 19 th Scale
Kyoto, Japan 21-30 May, 1980: 426-436
The study revealed that the landing from

purse seines steadily increased while those from Rampaninets have declined during 1976-79. This affected the Rampani fisheries traditional way of livelihood. Financial assistance and technical know-how will have to be provided to them.

..5 ref

Late to the first second to the Divakaran, O., M. Arun: Chalam, N.B. N. r, & N. G. Padmanabhan 33 1980)

(Dept. of Aquatic Biology & Fisheries, University of Kerala, Trivandrum 695007) Studies on the zooplankton of Vizhinjam inshore water south west coast of India. Mahasagar, Bulletin of the National

Institute of Oceanography. 13(4): 335-342 H - 1 - 1 TO 61

Mean monthly biomass values of plankton ranged between 1.3 and 15.25 ml/10 minutes of horizontal haul.

10 ref.

34 Doiphode P.V. and Rekha Naik (1975).

(Director of Fisheries, Panaji Goa,

403001).

On the occurrence of a giant rock-cod Epinephelus malabaricus (Bloch) and Schneider) in the estuarine waters of river Mandovi, Goa.

J. mar. biol. Ass. India, 17(2): 244-245.

...2 ref

Durve, V.S., P.K. Gupta & B.S. Khangarot (1980). 35 (Department of Limnology and Fisheries, Udaipur University, Dept. of Zoology, Bhopal Nobles College, Udaipur). Toxi ity of copper to the freshwater teleust Rasbora dam conius Neilgeriensis (Ham.). Nat. Acad. Sci. Letters 3(7): 221-223.

.. 10 ref

36 Dutt, S. & K. Sujatha (1980)

Dept. of Marine Sciences, Andhra University, Visakhapatnam-530003 On the seven species of fishes of the family Sillaginidae from Indian waters. (Mahasagar, 13(4): 371-375

The taxonomic status of the seven species of the family Sillaginidae has been given. A dec soon bug to co... 9 ref.

Outlined the progress in mixed farming in India.

Dwivedi, S. N. and P.R. .. Kumar Sinha (1980)

(CIFE, Bombay, India)

Fish boosts income of Indian paddy farmers.

Fish Faming International 7(2):18-19.

11 to entry 2

Gajbhiya, S.N., Jujalal Ram, Vijayalakshmi R. Nair & B.N. Desai (1981), 108(1) additional Institute of Oceanography, Regional Centre, Bombay-400061).

Plankton of the Narmada estuary and adjacent creeks.

Mahasagar 14(1): 23-32.

par 01 . By E. Chosh, Calcutta, Chelulys Par ...

40 Gaur, Krishna Kumar & Wdai Vir Singh (1978)

[Department of Zoology, R.B.S.

Coollege, Agra, India).

Department of Zoology, Agra College,

Agra, India.

Ionic composition of Keetham lake Agra.

J. Agri. Sci. Res., 20(1):96-102.

25 ref.

412 George, M. D. & K. Sawkar (1981)

(National Institute of Oceanography,

Dona Paula, Goa 403004).

Organically associated copper in Mandovi

and Zuari estuaries.

Mahasagar 14(1): 71-74.

Studies were conducted to determine the extent to which copper is associated with organic matter in the estuarine and riverine waters of Mandovi and Zuari.

42 George, M. J. & C. Suseelan (1980).

(Central Marine Fisheries Research Institute, Cochin, 18, India)

Changing pattern of prawn production in small scale fisheries of India.

Proc.Indo.Pacif Fish.Council 19th
Session, Kyoto, Japan: 2-4, 21-30 May,
1980: 402-425

The present indications are that further increase in effort by small mechanised vessels in the existing fishery grounds in the inshore regions may not bring any substantial increase in production Gear and region anal sis of the 1978 catch is presented along with illustrations.

5 ref.

43 Ghosh Apurba (1980). (Rahara Research Centre of CIFRI,
8 Station Road, Rahara, Khardah,
24-Parganas).
Matsya chase moyla jaler byabohar (In

Bengali).
(Use of sewage water in fish culture)

In Paribesh dile machhe variye deoya jaya, ed. by P. Ghosh, Calcutta, Chabbish Pargana Fish Producers Association.

44 Ghosh A & S.(K. Saha (1980): iV inbV & tope i stocking and of

and the state of the party of the state of the

the state of the s

(Ecology, 16-21 April, 1979. Kuala Lumpur Malaysia, Part 2, Ed. by J.I. Furtado. Kuala Lumpur, The International Society of Tropical Ecology: 1009-1016 Scope for paddy cum fish culture in India. In Tropical ecology and development: Proceedings of the Vth International Symposium of Tropical Ecology.

paddy (5,500 kg/ha) and one crop of fish (700 kg/ha) from the experimental paddy plot, within a period of one year. Ecological parameters of the paddy plot and economics of the culture system are discussed.

45 Ghosh, T.K. and S.K. Konar (1980).

- 1. Fisheries, Laboratory, Dept. of Zoology, Kalyani University, Kalyani 741235, West Bengal.
- · /- 2 National Environmental Engineering Research Institute, Nagpur 440020.

Toxicity of chemicals and waste waters of paper and pulp mills to worms, plankton, and mollusis. Indian J. Envkron. H1th : 22(4) :278-285. CAUSE BACK AND THE

46 Goel, P.K., K.P. Sharma & R.K. Trivedy (1,81) (Dept. of Pollution, Science College, Karad 415110). Ecological observations on some ephermeral ponds around Jaipur. Acta Limnol. Indica 1(1): 45-48. TRYOWN IN DA TENE OF THE

4 ref

- 47 Gopalan, U.K. & K.S. Purushan (1981).
  (National Institute of Oceanography, Regional Centre, Cochin 682018). Present status of brackish water shrimp culture in India. Seafd.export J. 13(1): 9-14 & 13(3): 11-10:
- Gopalan, U.K., P.P. Meenakshikunjamma & K.S. Purushan (1980) 48 (Regional centre of National Institute of Oceanography, Cochin 682018). Fungal infection in the tiger prawn (Penaeus monodon) and in other crustaceans from the Cochin backwaters. (Mahasagar) 613(4)in: 359-516, 365 tol le cota tu us

Infection of the two species of fungi CHANGE SPORT (Phycomycetes) in the tiger prawn (P. monodon) and three species in a phipods (Gammarus sp.) and tanaeidaceans (Apsendes spp) was observed. The significance of the co-existence between the shrimp and the two species of fungii which , turally occur in different environments has been discussed. 12 ref

49 Gopal, T.K., Srinivasa, K.P. Antony & T.K. Govindan (1981). Technology, Cochin). Packaging of fish and fishery products-Present Status and future prospects. Indian Seafd. export J. 13(1): 15-22.

50 Goswami, Umesh C. & Arun B. Barua (1981). (Department of Zoology and Chemistry Gau ati, University, Gaunati 781014, Origin of retinol in freshwater fish. Curr. Sci. 50(3): 150-151.

Reported tha Channa gachua, a retinol rich fish like other mammalian and avian species can convert 

11 ref

51 Gulati, R.D. & Wurtzschulz (1980).

(Vijverho Laboratorium, Limnological Institute, 3631 AC Nieuwersluis, The Netherlands.). Remarks on the present status of limnology in India based mainly on the Indian publications in Hydrobiologia and suggestions for future approach. <u>Hydrobiologia</u> 72(1-2):211-222

This is a review of the present status of limnological studies in India based on Indian publications in Hydrobiologia since the inception of the Journal Topped

5 ref.

52 Gupta, N.K. & Adarsh Kumari (1974). (Dept. of Zoology, Punjab University, · Chandigarh). On Hamacreadium manteri n. sp. (Trematoda: Allocreadiidae) from a)fresh water fish Chela bacala and Chela gora at Ropar and Ludhiana. Res. Bull. Panjab Univ. 25(3)4): 199-202. 53 Gupta, N.K. and C.L. Duggal (1977). (Dept. of Zoology, Panjab University. Chandigarh, India). On Xeylanema jullundur ens me. new nematode parasite from a freshwater fish, Mastacembelus armatus at Jullunder (Punjab) and a key to the species of its genus. Res. Bull. Panjab Univ. 28 (3-4): 175-178.

1110.31

8 ref

54 Gupta, N.K. & Shashi Arora (1979) (Dept. of Zoology, Panjab University, Chandigarh). On a new species of the genus Gangesia Woodland 1924 (Cestoda): Protecephalo Idea) from a freshwater fish Wallago attu along with a survey of its related forms.

Res. Bull. Panjab Univ. 30 (1-4): 27-36.

.bang Isotan Ausurvey of the genus Gangesia with special reference to the Indian speciet has been made. A new species G. haryanaeus has been described and its validity described.

11 ref

inqa i -oi 55 Gupta, N.K. & Shashi Arora (1979) (Dept.of Zoology, P njab University, Chandigarh). On Proteocephalus tigrinus Woodland 192 (Proteocephaloidea) : Pfoteocephalidae) a cestode parasite of Rana tigrina

.(100 at Amritsar (Punjab, India).

Res. Bull. Pa jab Univ, 30 (1-4): 79-82.

1 ref

56 Hafeezullah, M. (1975). (Zoological Survey of India, A new cryptogonimidae of marine fish from Orissa coast with a brief review of the genus Paracryptogonimus Wamagul.

1934. J. mar. biol. Ass. India 17(2): 49-55. 14 ref

57 Hafeezullah M (1978). (Zoological Survey of India, Calcutta). 10.00 Acanthocolpid trematodes of marine fishes of India, with considerations on Synonymies in the group. Bull. Zool. Surv. India 1(1): 29-36.

15 ref

. com att to 58 Hafeezullah M and I.B. Dutta (1980). (Zoological Survey of India, Calcutta). Digenetic trematodes of marine fishes of Andaman. Rec. Zool. Surv. India, 77 (1-4):75-82.

59 Hanifa, M. A. & T. J. Pandian 1980.

Lorgen . 1 Post Graduate Dep. ot Zoology, St. Xarior! GCollege, Palayamcottai 627002, Tamil Nadu.

2 School of Biological Sciences,

Varnai University, Mad - / Madurai Kamraj University, Madurai, Tamil Nadu.

Energy flow in a tropical pond. In Tropical Ecology and development, Proceedings of the Vth International Symposium of Tropical Ecology, 16-21 April, 1979, Kuala Lumpur, Malaysia Part 2 ed. by F.I. Furtado, Kualalumpur, The International Society of Tropical Ecology: 799-807.

60 Hasnain, Absar-UL, Seikh Amjed Ali & Iqbal Ahmad Khan Language 19 : (1981). (Dept.of Zoology, Aligarh Muslim University, Aligarh, 202001). Transferrin polymerphism in Channa puntatus. Curr. Sci. 50 (11) : 511-512

: (2) I gibel . es. . total . com . t . 9861

11

(Allia) loTransferrin polymorphism have been reported to occur in sera of several freshwater fishes. In this account the authors report transferrus phenotypes of Channa punctatus! in the state of th

Ja es, P.S.B.R. & Vija humar M. Baragi (1980) University of Agricultural Sciences,
College of Fisheries, Mangalore 575002

Ovary as an indicator of frequency 61 is to men wof spawning in fishes.

Proc. Indian natn. Sci. Acad(B): 46(4) 479-489.

Discussed the occurrence and nature of partially spent ovaries and their relation to the frequency of spawning in Eupleurogrammus intermedius, Trichiurus lepturus and Johnicops osseus with supporting evidence from data on other fishes.

22 ref

Jarare, A. & C. R. Bhaskar (1980). 62

> Hissand has been cell and Dev. Biology Unit, School of studies in Zoology, Vikram University, Ujjain .202-802: 13 Isolation and purity of catfish egg mitochondria. Natn. Acad. Sci. Letters 3(10):317-320.

> > .(18 )) / margan .9. .9 .0 .15 ref

Jayangoudar, Indira (1980)
Ahmedabad Field centre, National Environmental Engineering Research Institute, 19A Vijay Colony, Ahmedabad 380 013, India. Hydrobiological studies on the Ajwa Missis Reservoir the source of raw water boint supply to the Baroda water works. Hydrobiologia, 72(1-2):113-123. Two year detailed hydrobiological studies

of the Ajwa Reservoir and Nimeta Water works was carried out.

. ( . . . ) [symi] 1122 ref. 80

64

and the state of t

Jayaprakas, V. 1980 (Kerala Agricultural University, Coconut Research Station, Kumarahom, India).

Culture possibilities of pearlspot (Etroplus suratensis) in Kerala.

Seafd export J. 12(11): 13-15.

The author describes all details of pearl spot (Etroplus suratensis) culture and recommends, it as the most suitable fish which can be cultured both in fresh and brackish water of Kerala.

1978 (Zoological Survey of India, Calcutta) Functional responses of cat fish barbels. Jayaram, K. C. 65 Bull. Zool. Surv. India 1(1): 77-80

Cat fish barbels are generally considered as intended for tactile purposes. Evidences have indicated that the barbels have diverse functions. These gustatory, locomotory, aggressive and sexual. aspects are discussed. The metal

Jayaram, K.C. & J.R. Dhanze (1978). (Zoological Survey of India, 66 Calcutta) . Harman ra. 9.0 & . s. entst. Siluroid fishes of India, Burma and Geylon 19.A note on the systematic position of Tachysurus serratus (Day) (Ariidae). Bull. Zool. Surv. India 1(2):203-205.

Jayaram M.G. & H.P.C. Shetty (181). 67

University of Agricultural Sciences, College of Fisheries, Mangalore 575002:

Formulation, processing and water stability of two new pelleted fish feeds. Aquacul ture 23 (1-4) : 355-359.

Discussed the possibility of replacing the costlier fish meal by the cheaper dried silkworm pupae as a protein source. A brief mention is made regarding their suitability as fish feeds.

9 ref.

Jha, Vishnu Dayal (1980). 68

Punjabi University, Patiala. A quick non parametric two-sample . Modform of test for comparing variances. J. Indian Soc. Agri Stat. 32(3): 51-61.

A quick non parametric test has been developed in this paper by using a finite number of quantiles and their neighbouring observations for comparing the variances of two samples drawn frome two populations both assumed to be unimodal and absolutely continuous having the same functional form with identical locations but possibly different variances.

14 ref

Allahabad)

Riverine fishery resources of India
and their socio-cultural impact.

In Tropical Ecology and development.

Proceedings of the Vth International
Symposium of Tropical Ecology,
16-21 April, 1979, Kuala Lumpur,
Malaysia, Part -2, ed. by F.I. Furtado,
Kuala Lumpur. The International
Society of Tropical Ecology: 747-753.
The topography, general ecology and
commercial fisheries of the important rivers have been

commercial fisheries of the important rivers have been presented. Evidence of depletion of the fish stocks of the Godavari has also been gathered. Cai sative factors for the decline in the resources are analysed and ameliorative strategies that may help in revitalizing the dwindling riverine fisheries of India are suggested.

70 Jhingran, V.G. and B.K. Sharma, (1980). (CIFRI, Barrackpore)

Integrated livestock-fish farming
in India.

Proceedings of the Iclarm Searca

Conference on Integrated Agriculture 
Aquaculture Farming Systems,

Manila, Philippines 6-9 August, 1979:

135-142.

The work done on pig-fish farming and duck fish farming in India is described and the results obtained including the economics of integrated systems, are compared with those of modern semi-intensive fish culture.

25 ref

71 Jhingran, V.G. & S.D. Tripathi (1980).

i enterprise

(CIFRI, Barrackpore).
Research and strategy for development of fisheries in inland aquatic ecosystems of India.
Transcal Ecology and development:

In Tropical Ecology and development:

Proceedings of the Vth International
Symposium of Tropical Ecology 16-21

April, 1979, KualaLumpur, Malaysia,

Part 2 ed by J.I.Furtado, Kuala Lumpur.

The International Society of Tropical

4: (91) Ecology 1369-1378.

Jhingran, V.G., V.R.P. Sinha and M. Sinha (1980).

(CTFRI, Barrackpore)

Trends in development of present
day aquaculture in India and their
socio economic impact.

(In Tropical Ecology and development:
Proceedings of the Vth International
Symposium of Tropical Ecology 16-21
April, 1979, Kuala Lumpur, Malaysia,
Part - 2, ed by J. I. Furtado.
Kuala Lumpur, The International
Society of Tropical Ecology: 1209-1218

. 1

Job, S. V. & V. Kanan (1980).

Madurai, University, Madurai,
625021, India).

The detritus limnology of Sathiar

reservoir.

Hydrobiologia 72(1-2):81-84.

In Sathiar reservoir detritus plays a significant role as a means of promoting ex-change between the bottom sediments and the column of water. The means by which recycling of the various components in the aquatic biosphere takes place are discussed.

18 ref

74 Johal, M.S. and K.K. Tandon (1980)

(Dpt. of Zoology, Punjab University,

Chandigarh, India).

Monograph on the fishes of reorganised

Punjab Part II.

Pb. Fish. Bull. 4(1): 39-48.

Given a detailed description of the fishes of re-organised Punjab with figures.

16 ref

75 Joseph K. George & V. Mural eedharan (1980).

(Research centre of CIFT, Calicut,
India).

Indian fish curing industry -present
status and some suggestions for
improvement.

Seafd. export J. 12(12):15-18.

76 Joshi, B. D. (1980). (Dept. of Zoology, Aumaun University,
Campus, Almora).

On some normal haematological values
of some freshwater teleosts.

Nat. Acad. Sci. Letters 3(8):251-254

This paper embodies results on haemoglobin (Hb) concentration, haematocrit /packed cell volume (PCV) and erythrocyte sedimentation rate of Amblypharyngodon mola, H. fossilis, Anabas testudineus Cirrhina mrigala, X. cancila, W. attu and Channa punctatus.

29 ref

77 Kalpana K. & K. Vanamala Naidu (1979).

- : ethylene-

Department of Zoology, Andhra
University, Waltair, India.

Zoology Department Government College
Chiltor, Andhra Pradesh, India.
Aulophorus flabelliger Stephenson,
1931, a rare and interesting freshwater Oligochaete new to Asia.
Hydrobiologia 67 (3): 273-274.

(Dligochaete) from Asia collected from Andhra Pradesh, India.

7 ref

78 Kanaujia, D.R., S.Jena and A.N.Mohanty 1981.

(C.FR Substation, Cuttack, Orissa, 753001).

Note on the effect of mahua oil case on zooplankton.

Indian J.Anim.Sci.51(2):257-260.

79 Kannan V. and S.V.Job (1981),
(School of Biological Sciences,
Madurai 625001)
Seasonal variation of zooplankton
in a tropical impoundment,
Acta.Limnol.India.1(1): 29-34.

Only two major components of zooplankton occur. Rotifera and copepoda. The relationship between primary producer and zooplankton shows that the latter is not dependent wholly on the former. The possibility of detritus forming a source of food, especially during the near absence of primary producers is suggested.

80 Kaul V., G.L. Trisal and Sidharth Kaul (1980).

(Post Graduate Dept. of Botany
University of Kashmir, Srigagar,

Mineral removal potential of some mearophytes in two lokes of Kashmir.

J. Indian Bot. Soc. 59: 108-118.

Determination of six essential inorganic nutrients were made on eighteen macrophytic species in the Dal and the Anchar lakes in Srinagar.

17 ref.

81 Kawatra, A. K. (1989) . Research of the second of the s

The first of

Large good from pro-

Measures to be adopted for the conservation of fisheries in Punjab.

Pb. Fish. Bull. 4(1): 15-25.

82 Khangarot B.S. (1981).

(Post Graduate, Department of Zoology Bhopal Nobles College, Udaipur 313001)

Chelating agent Edta decreses the journal toxicity of copper to fish.

Curr. Sci. 50 (5): 246-248.

The disodium salt of ethylenediamine tetracetic acid (EDTA) can be used for treducing the fish mortality at short- term exposure.

Verte on the called tour story

10 ref

83 Khangarot, B. S. (1981).

Post graduate Dept, of Zoology,
Bhopal Nobles College, Udaipur 313001
Dept. of Limnology and Fisheries University of Udaipur, Udaipur 313001.
Effect of zinc on adenosine Triphosphastase activity in the gills of
Channa punctatus (Bloch).
Curr. Sci. 50(3) : 151-152.

chemical activity and distribution of adenosine triphosphatase (ATPase) in the gills of Channa punctatus

create, to amonds and

with the first

6 ref

84 Krishnamurthy, V., F.V. Paju and F.C. Inomas (1975). CSMCRI, Marine Algal Research Station, Mndapam. n augumenting seaweed resources of India.

J. mar. biol. Ass. India 17(2): 181-185.
This paper describes the experiments carried out to augment the resources by cultivation of the economically important species.

85 Kulshreshtha M. and Brij Gopal (1981).

(Dept. of Botany University of Rajasthan, Jaipur, 30,2004). Effect of sewage pollution on growth of two aquatic macrophytes.

Acta Limnol. Indical(1):19-26.

The growth of Ceratophyllum demersum and Utricularia flexuosa has been studied experimentally at different concentrations of sewage polluted water.

18 ref.

Lalithambika, D. C.B., T. Balasubramanian, H. Krishna Iyer and M. Krishnakutty (1980).

Central Institute of Fishries

Technology, & Cachin 682029). Feeding efficiency of Penaeus indicus and Metapenaeus dobsoni in different experimenta substrata.

(Mahasagar, Bulletin of the National

Institute of Oceanography)

13(4): 353-358.

Silt and clay adversely affect the fi feeding efficiency of P. indicus and M. dobsoni especially in higher concentrations. The data also suggest that P. indicus gets more easily adopted to a muddy substratum than M. dobsoni.

3 ref.

87 Lomte, V.S. & S.N. Bazhanpurkar (1979).

Marathwada University, Au

and order of also that

Marathwada University, Aurangabad, 431004, India.

Biochemical variations in relation to thermal acclimation in <u>Corbicula</u> regularis.

. Proc. nat. Acad. Sci. India 49\$(4) 196

Water content increased at high temperature acclimation and glycogen and fat increased in cold acclimation. Little changes were observed in protein content of the clam. The changes may be due to rise in metabolic rate.

and the salaref.

Mahajan, C.L., S.D. Sharma, S.P. Sharma and N.K. Arora
Dept. of Zoologyk University of
Rajasthan, Jaipur 302004
Productivity potential of reservoir
ecosystems with special reference to
Rajasthan.

Acta Limnor Indical(1) : 39-40.

3 ref

89 Mane, U.H. (1981).

Marine Research Laboratory of Marathwada University, Ratnagiri 415612.

Dept. of Zoology, Marathwada University,

ib mi incense Aurangabad-43 1003

The edible clam Katedysia opima from the Ratnagiri coast.

Mahasagar 14 (1): 91-94.

The second of the cold ref

90 Maru L. V., R. G. Parekh & E. J. Lewis (1975).

Central Salt and Marine Chemicals
Research Institute, Bhavanigar
Studies on mineral composition of
brown algae of Saurashtra coast.

J.mar.biol.Ass.India 17(2):241-244.

The mineral composition such as total ash, insoluble as, sodium, potassium, cealcium, magnesium and sulphate were analysed. The result is compared with other published data.

6 ref

91 Mathew Thresiamma and N. Balakrishnan Nair (1980).

· 1

Dept. of Aquatic Biology and Fisheries, University of Kerala, Trivandrum 695007 On the planktonic diatoms of Vizhinjam coast.

Mahasagar, Bulletin of the National Institute of Oceanography 13(4):367-369.

5 ref

92 Mathew, Thresiamma & N. Balakrishnan Nair (1981).

Dept. of Aquatic Biology and Fisheries,
University of Kerala Trivandrum 695007
Phytoplankton of the Velilake a lagoon
on the South West coast of India.

Mahasagar 14. (1): 45-54.

19 ref

93 Matkar, Vasanti M. and K.C.Pillai (1976).

(Health Physics Division, Bhabha tomic Research Centre, Bombay 85.

Zinc in an estuarine environment.

J.mar.biol.Mss.India 17(2):108-115.

6 ref

or L.V., R.s. careko a m.J.kesis (1). Central dalt and Marine Chemicals

Menezes, Marian R. (1980) in that domesses Oceanography,

Dona Paula, Goa-403004.

Some observations on the morphometry and biology of Psethodes erumei

(Bloch) and Pseudorhambus arsius (Hamilton-Buchanan) from the Goaregion. Mahasagar, Bulletin of the National Insitute of Creangraphy 13(4):377-381.

data indicated that there is direct relationship between the head length, depth of the body and total length.

6 ref.

95 Menon, A. G. K. and K. Rama Devi (1978)

Sothern Regional Station, Zoological Survey of India, Madras.

The comparative ecology of two sympatric species of exyurichlthys Bleeker 'Pisco: Gobiidae) from the Ennore estuary Madras.

Length weight real ationship of

O.microlepis Blecker) and O.tentacularis (Cuu.val) Surv. India 1(3):263-266.

96 Mishra, B.B. and R.R. Prasad.

17(2):10 - 11

94

Fish Farmers Dedevelopment Agency,
Son that paragana, Dumka 814101
Development of Aquaculture through
Fish Farmers Development Agency.
Seafd.export J. 13(4):9-14.

97 Mohanachari V, W.Rajendra, K, Indira, & K.S. Swami
(Dept. of Zoology, S.V. University,
Tirupati 5175002, India).
Rhythmic variations in hepatic ammonia
metabolism of toad, Bufovulgaris.
Curr, Sci. 49(19): 734-735.

The activity levels of AMP-deaminase and glutamate dehydrogenase were assayed and the ammonia content was estimated over 24 hr at 4 h interval, in the liver of toad, Bufo vulgaris.

incommendation (1901)

11 ref

98 Mukherjee, R.P. (1978).

, v .

(Zoological survey of India,
8 Lindsay Street, Calcutta 700 016,
India).

Occurrence of Opalina scalpriformis Ghosh
(Protozoa Opalinidae) in the toad B fo
Himalayana Gunthur from Darjeeling
District West Bengal. Lower J. Zool. Soc. India 30(1-2): p 83.

The zoroccurrence of <u>O.scalpriformis</u> from high altitude is intersting and the host reported is a new record.

Some freshinger oli rech.

5 ref.

99 Muley, E. V. (1978). (Zoological survey of India, Western Regional Station, Poona).

Biological and chemical control of the vector snail Melania scabra (Gastropoda: Prosobranchia).

Bull. Zool. Surv. India, 1(1): 1-5.

Water beetles, crabs and fishes like Ophioeephalus gachua were found to be the natural enemies of the snail. Fruit extracts of plants like Acacia arbica, Acacia sp., A. concinna, Sapindus paraginatus and Neem margosa were found to kill the snail population. Copper sulphate and Cupric chloride are the most satisfactory molluscicides for Melania scabra in the field.

. (Naval Physical and Oceanographic Laboratory, Cochin 682004). Characteristis of ocean bottom wolk sediments off Visakhapatnam. J. mar. biol. Ass. India 17(2): 18-26.

and the beginned on the department ref.

101 Nagabhushanam, R. and G.K. Kularni, (1979). (Department of Zoology, Marathwada University, Aurangabad 434004, India) Blood glucose in marine/penaeid prawns: 83 1 Neuroendocrine regulation in Parapenaeopsis hardwickii (Miers) (Crustacea, Decapoda, Penaeidae). Hydrobiologia,  $\underline{6}7(2)$ : 113-118.

19 ref

Naidu, K. Vanamala and H. N. Srivastava, (1980).

Contract of Angline

1 Department of Zoology, Woernment College, Chittor, 517002, India.

National Environmental Engineering Research

Institution, Nagpur, India. Some freshwater oligochaet of Nagpur, India.

<u>Hydrobiologia</u>, 72(3): 261-271.

Records the occurrence of 23 species of freshwater oligochaetes belonging to five families from Nagpur, India. Nais andina Cernosviorr is a new . or busties, crabe and fishes like

Nair M.G.K., Anand Chauhan and S.F.Bhatnagar (1978). 103 (Dept. of Zoology, Govt. Post Graduate Coblege, Narsinghpur, M.P., India). The heart, and its conducting system of the flying fish, Exocoetus poecilopterus cur. and val. J. Zool. Soc. India 30 (1&2): 57-63.

The a trium and the ventricle are the true chambers of the heart and the sinus venous and the conus arteriosus are the 'accessory chambers".

104 Nair, Sreekumaran, S.R., C.T. Achutha kutty, Vijayalakshmi R. Nair and V.P. Dona Faula, Goa 403004 Flankton composition in the coastal waters between Jaigarh and Rajapur

along west coast of India. Mahasagar, Bullatin of the National Institute of Oceanography, 13(4) : 343-352. The chief of poul try

18 ref

to the original Nammalwar, P.& T. Thangaraj (1980). 105 (Department of Zoology, University of Madras, Madras-5). Problems of diseases on marine . (osor) psi m fish and prawn farming in India. Seafd. export J. 12(12):9-12.

and ingress of the common of the

Natarajan, A. V. (1980). (CIFRI, Barrackpore) 106 Moyla jale matsya chaser samasya (in Bengali) (Problem of fish or round culture in sewage-fed water). In Paribesh dile machhe-Variye deoya jaya, ed. by Premtosh Ghosh, Calcutta, Chabbish, Parganas, Fish Producers Association. ာမို (C နည်းမေတာ့မှုရ) ကြန်းကြောင့် သို့သည်။ မြန်မာကြောက်သည်း သည်

107 Natarajan, A. V. (1980): (St. Refer, (CIFRI, Barrackpore). Research and development of Indian reservoir fisheries. (ICLARM, Newsletter 3x(4): 6-7

Natarajan, G.M. (1981). (Dept. of Zoology, Govt. Arts College Dharmapuri 636705, India). 108 Changes in the bimodal gas exchange and some blood parameters in the airbreathing fish Channa striatus (Bleeker) following lethal (LC 50/48hrs) exposure to Metasystax (Demeton). Curr. Sci. 50(1): 40-41.

The action of lethal (Lc 50/48 hrs) exposure of Metasystox on the oxygen consumption and haematology of Channa striatus which is extensively cultured in ponds and rice fields and is frequently exposed to Metasystox during agricultural operations.

a president a finite of the contract of the co Natarajan, M. & T. J. Varghese (1980). 109 (University of Agricultural Seiences, College of Fisheries, Mangalore 575002, India), Studies on the effects of poultry manure, digested sewage sludge

cake and cow-dung on the growth rate

of Catla catla (Hamilton) and

Cyprinus carpio var.communis (Linneaus, Agricultural Wastes, 2(4):261-271.

The effect of poultry manure, digested sewage sludge cake and cow dung on plankton production anfi fish growth were evaluated.

26 ref.

Nayar, K. Nagappan S. Mahadevan, K. Alagaraswami & P. T. 110 ed. Meenakshi sundaram (cd. (1980). Coastal aquaculture : Mussel Farming Progress and prespects (Bull. No. 29, CMFRI, Cochin, 56 p.)

\*\*\*

Pal, R.N. (1980). (CIFRI, Barrackpore). 111

ing madrices Mechhogherite machher rog.0 pratikar

(in Bengali).

dati . Fish diseasea and its control in bheris. (In Paribesh dile machhe variye deoya jaya ed. by P. Ghosh, Calcutta, Chabbish Pargana Fish Producers Association. nothing to thompothers.

112 Panampannayil, S.U. 1981

(Regional centre of National Institute of Ocenography, Cochin 628018). On two new species of Siriella ( Mysidacea).

Mahasagar, 14(1):87-90. Descriptions of two new mysids,

Siriella africana sp. nov. collected from Agul has Bank and S.intermedia sp. nov.from Laccadives are given.

4 ref.

113 Fandey, K.C. and Sarala (1979).

(Zoology Department, Lucknow University, Lucknow, India).
Olfactory organs of a flatfish.
Fseuderhombus triocellatus
(Schn). Proc. Natn. Acad Sci. India
49 B(3) 1:136-138.

The adaptive morphological variations in the offactory organs of the flat fish,

Freudorhombus triocellatus have been observed in different weight groups of the fish.

9 ref.

3 ref

115 Parekh, R.G., M.I. Dave & E.J.Lewis (1975).

(Central Salt and Marine Chemicals Research Institute, Bhavnagar Alginic acid content in common benthic brown algae of Saurashtra Coast.

J.mar.biol.Ass.India 17(2):245-247.

Seventeen species of brown algae were studied for their alginic acid content.

It varies from 5.3 percent (Iyengaria) to 16.6% (Sargassum cinereum).

Dictyopteris, Spathoglossum and Cysto-seira also can be utilised for alginic acid.

4 ref.

116 Parulekar, A.H. (1981). (National, Institute, of Oceanography, Dona Faula, Goa-403004). Marine fauna of Malvan, Central West coast of India. Mahasagar 14(1) :33-44

. Marine fauna of the rocky, sandy and muddy shores of Malvan (Lat 16°05', Long 73°0 3'E) comprises of 208 species belonging to 172 genera, 97 families, 16 classes and 9 phyla. Forty major animal types including corals and pearl oysters were identified.

117 Fathak, S. C., Y. S. Yadava, M. P. Singh Kohli (1980).

(Air-breathing fish culture, Unit Central Fisheries, ICAR, Gandhi Basti, Gauhati 3, Assam, India) Semi intensive culture of Heteropneustes fossilis (Block) from a Gauhati through monoculture experiment Proc. Indo Pacif. Fish. Council 19th Session Kyoto Japan, 21-30 May 1980 539-547.

This experiment not only proves the economic viability of such venture, but also suggests utilisation of fallow carp nurseries during lean period of January to June.

118 Pati, S. (1981),

(Dept.of Zoology, Ravenshaw .TesoD strikesum .... College, Cuttack 753003, Wrissa). Observations on the lengthweight relationship of pemfret from the Bay of Bengal. Mahasagar, 14 (1):83-85.

119 Pati, S. (1981)

(Dept. of Zoology, Ravenshaw College, Cuttack 753003, Crissa). On the distribution and related ecology of pamprets from the Indian seas. Mahasagar, 14(1): 61-\$5.

Fillai, N. N. 1975. (Cer. ral Marine Figures Research 120 Institute, Cochin 682018). Larval development of Caridina pseudogracilirostris reared in the laboratory.

J. mar. biol. Ass. India, 17(2): 1-26.

Complete larval development of C.pseudogracilirostris. Thomes et al. was studied by rearing' in the laboratory. Six zonal stages were recognised. These stages were completed within 9 days from hatching. Detailed descriptions of zeea, post larva and juveniles are given.

7 ref.

Fillai F. Farameswaran (1976) . word has it. 121

(CMFRI, Cochin 682018).

On the species of Pontella Dana and Pontellopsis Brady of the International Indian Ocean Expedition collections (1960-1965). J.mar.biol.Ass.India, 17(2):129-146.

Eleven specie's were identified. The paper deals mainly with the taxonomy of different species with discussion on their distribution.

Prasad, R. Raghu, T. R. S. Tampi, & M. J. George (1975). 122

1&2 ICAR Krishi Bhavan, New Delhi.

3 Central Marine Fisheries Research Thyllosoma larvae from the Indian
Ocean collected by the Dana Expedition Institute, Cochin. J. mar. biol. Ass. India 17(2):56-167.

The systematics of the phyllosoma larval forms collected by the DANA Expedition in 1928-30 from the Indian. Ccean region is dealt with in this paper.

(Zoological survey of India, Premkumar, V. K. and A. Daniel (1975). 123

Calcutta). Distribution pattern of the economically important spiny lobsters of the genus Panulirus white in the Indian Ocean.

J. mar. biol. Ass. India 17(2):36-40.

An attempt is made to explain the distribution patterns of these species taking into consideration, the prevailing ocean currents influencing the dispersal of the free swimming larvae. 14 ref.

124 Rahman, Asad Rafi and Sardar Mahmood Khan (1981). (Dept. of Zoology, Aligarh Mullim University Aligarh 202001). The olfactory organ in a few Indian teleosts. Curr. Sci. 50(7) : 329-331.

. Studied the functional morphology and histology of the olfactory organs in some freshwater and marine fishes.

11 ref.

125 Raja Bai, B., Subba Rau (1978).

(Department of Zoology, S.U. University, Tirupati, India). Starvation stress on tropical crustaceens 3. Effect of starvation on the chlorides and the free amino acids of the blood of the freshwater . amphibious field crab, Paratel Phusa hydrodromus (Arthropoda, Decapoda, Potamonidae)

1-0: (1) 1 -1: J. Zool. Soc. India 30 (1&2):37-42.

Department of Zoology, S.U.Univer-The state of the s

. 16 ref.

126 Ramalingam, R. and Y. Srinivax Redd, (1981).

(Dept. of Zoology, Annamalai

University, Annamalainagar, 608002,

Tamil Nadu).

Acute histopathological effects

of lindane (Y-Benzene Hexachloride)

on the liver of Colisa lalia.

Curr. Sci. 50(13): 578-580.

0 ref.

Ramanujam, S. N. and B. K. Ratha (1980).

(Bkological chemistry unit,
Dept. of Zoology, School of Life
Sciences, North Eastern Hill
University, Shillohg 793014).

Glucose-6 phosphate dehydrogenese
(G6PDH) and lactate dehydrogenese
(LDH) activities in two air-breathing
and two gill breathing species of fish
- a comparative study.

Proc. Indian natn. Sci. Acad(B): 46(2)
168-171.

18 ref.

335 ref.

128 Ramaswami, L.S. (1980).

(387 Upper Orchards, Bangalore-560 080)

Vertebrate neurosecretion - review.

Froc. Indian natn. Sci. B 46 Supplement1:1-78

This issue of the Proceedings

contains review articles on "Verte-brate Neuro secretion" by L.S.

Ramaswami.

Ram, Lakshman & K. C. Kansal (1978).

(Zoological survey of India,
Gangetic Plains Regional Station,
Patna).

A note on the systematic position
of two siluroid fishes, Ompok
pabda(Ham.) and Ompok bimaculatus
(Bloch).

Bull. Zool. Surv. India, 1(2): 187-191.

Importance of osteological characters in evaluating the exact taxonomic status of the species is discussed.

Rao, B.L, S. Prakasa and M. Srmehari (1980). 130

Indian statistical Institute 1

M.S. University of Baroda. 2 On some properties of the geometric distribution. Sankhya, The Indian Journal of Statistics, Series A Pts. 1 &2: 120-122.

In this note a necessary and sufficient condition for then divisibility of a random variable (r.v.) with support contained in (0,1,2...) is given.

2 ref.

Rao, K. Siva Prasada, K. Sathya Prasad and K. V. Ramana 131 Rao (1930). Dept. of Zoology, S. V. University, Tirupati 517502. Sublethal effect of methyl parathion on tissue proteolysis in the freshwater mussel Lamellidens marginalis (Lamarck) Proc. Indian natn. Sci. Acad (B) 46(2) 3 164-167.

15 ref.

132 Rao, M. Babu and G. M. Yazdani (1978).

Zoological survey of India,

Timgat Nagar, Hyderabad, India. Zoological survey of India, Rajendra Nagar, Patna, India.

> Specific indentity of Lepidocephalus guntea (Hamilton) (Cypriniformes : Cobitidae) with considerations of L. thermalis (vol) as its synonim. J. 7001. Soc. 30 (1&2): 13-30.

> > 6 ref.

133 Rao, M. Babu and G. M. Yazdani (911978)

(Zoological survey of India, Western Regional Station, Foona.) Trends of evolution in the cyprimid genera Psilorhynchus and Parapsilorhynchus.

Bull. Zool. Surv. India 1(2): 129-135. Trends of evolution in the cyprinoid genera Parapsilorhynchus Hora and Psilorynchus Mclelland have been traced.

Rao, N. V. Subba, A. K. Das and S. C. Mitra (1980). 134 1&3 To Zoological survey of India, Calcutta.

> Zoological survey of India, Andaman and Nicobar Regional Station, Port Blair. On freshwater molluses of Andaman and Nicobar Islands. Res. Zool. Surv. India 77 (1-4):215-245.

Keys are provided to genera and species. Measurements (in mm) are given for the largest, medium and smallest specimen of each species.

11 ref.

135 Rao, P. V. (1980) (Central Marine Fisheries Research Institute, Cochin, India).

Credit facilities for the development / /of small scalo Proc. Indo-Pacif Fish Council 19th Session, Kyto Japan 21-30 May 1980, fishories development. 282-288.

Discussed about the developmental programmes available in India for small scale fisheries.

(Dept. of Zoology, Kurukshetra ... ... 136 Rishi K.K. 1980 University, Kurukshetra 132119, India). Advantages and methods of chromosomal an lysis in fishes. Pb Fish. Bull. 4(1) :-7-11. dia era so autam

16. 6. 11. 14. 14. 2.

137

Proposition of the state of Given an account of the advantages of fish charomosome studies and a short review of the methodology employed as also a simple technique in more detail. Mark of the state of dial cosponso of two book Maria Crosson Eq. 11 edge maria.

Rishi, K. K., M. S. Haobam and Jaswant Singh (1981). (Dept. of Zoology, Kurukshetra University, Kurukshetra 132119). A new karyotype in a teleost fish. Curr. Sci. 50(5): 244-245.

A karyotype of 24 chromosomes all of which are acrocentric has been found in a teleost M. alba. 6 ref

138 Roy,P.(1980). Kolkatar nardamar jale machh chasser sambhabona (in Bengali).
Possibilities of fish culture using Sewage of Calcutta.

In Paribesh dile machhe variye deoya jaya, ed.by P.Ghosh, Calcutta, Chabbish Pargana, Fish Producers Association)

139 Sahu, A. K. and M. K. Khare (1980).

(Developmental Biology laboratory,
School of Life Sciences, North
Eastern Hill University Shillong).

Field key of the tadpoles of Rana
limnocharis weigmann. (Anura:
Ranidae).

Nat. Acad. Sci. Letters 3(5): 161-164.

The tadpoles of <u>Mana limnocharis</u> are characterised by a keratedont formula

1+1

at Gosner's stage 38, besides other diagonostic characters described in this paper.

7 ref.

140 Sahu, Jyanti, S. P. Adhikary, H. Fatnaik (1981).

(Dept. of Botany, Berhampur University,
Berhampur 760007).

Effect of organic substrates on growth
and chlorophyll content of Westiellopsis

prolifica and Anabaena sp.

Sci. & Cult, 47(2):68-69.

This work aims at studying the differential response of two hexose sugans on growth and chlorophyll production of W. prolifica and Anabaena sp.

S.L. Jain, M.L. Dhaker and L.N. Vyas (1981). 141 Sankhla S.K., (Dept. of Botany, University of Udaipur, Udaipur 313001). Phytoplankton periodicity in three lakes around Udaipur. Acta limnol Indica 1(1):11-18.

Periodicity of phytoplankton in rela tion to physico-chemical complexes of water have been discussed.

the segment of

21 ref.

Sareen, M.L. and Harleen (1978). 142 (Dept. of Zoology, Panjab University, Chandigarh). Morphological and cytochemical studies a reacon the covary of the frog, Rana cyanophytyckis Schneider and the toad, Bufo melanostictus Schneider Res. Bull. Panjab Univ. 29(1-4):45-54. a tronten et il localitations 17 ref.

Saxena O.P. and R.S. Yadav (1981). 143 (Zoology Research Laboratories M.M. College, Modinagar 201204). Spontaneous epidermal neoplasm in freshwater aquarium fish Xephophorus maculatus (Gunther) . ib all and maculatus Curr. Sci. 50(2): 101-102.

4 ref.

Shah, N.M. (1975). (University. of Kerala Oceanographic 144 milau Laboratory, Cochin). . . . . Primary standing crop and a few related contraction of the Laccadive sea off Cochin: One annual cycle. J.mar.biol.Ass.India 17(2):168-174. The second section is a second se Second se 15 ref

The second secon

of the second se

145 Shanbhogue, S.L. (1975). (Eisheries College, Mangalore). Descriptions of stomatopod larvae from the Arabian sea with a list of stomatopod larvae and adults from the Indian Ocean and a key for their identification Part 1. J. mar. biol. Ass. India 17(2): 196-237.

Sharma, B.K. and K.K. Tiwari (1978). (Zoological survey of India, Calcutta) 146 Larval development of Macrobrachium lamarrei H. Milne - Edwards 1837). (Crustacea: Decapoda: Palaemonidae) under laboratory conditions. Bull. Zool. Surv. India 1(3):227-241.

23 ref.

Shenoy, Shakuntala & K.N. Sankolh (1975). 147 Taraporevala Marine Biological

Research Station, Bombay. Department of Zoology, Karnataka University, Dharwar-3, Karnataka. On the life history of a porcellanid crab Petrolisthes lamarckii (Leach) as observed in the laboratory. J. mar. biol. Ass. India 17(2): 147-159.

In P.lamarckii two zoeal and a megalopa stages along with first crab-instar have been observed. These stages have been fully described and illustrated. The validity of telson characters as of generic significance is discussed. A key to the first zoeal stage of the known species of the genus Petrolisthis is also given.

17 ref.

Victoria Company Company 148 Siddiqui, M.S., H. Haq and M. Abbas (1980). (Dept. of Zoology, Aligarh Muslim University, Aligarh 202001, U.P.). Fish potential in derelict waters of India chain. In Tropical Ecology and development. Proceedings of the Vth International Symposium of Trapical Ecology 16-21 April 1979, Kualalumpur, Malaysia, Part 2, ed. by F. I. Furtado, Kuala lumpur, The International Society of Tropical

Ecology, 809-813. Over 0.6 million ha of derelict waters of India can be better utilised for air-breathing fish culture. The av. productivity of the water is 2438 x 450 phytoplankton cells/m<sup>2</sup> 603 x 450 zooplankton/m<sup>2</sup> 475 benthos/m<sup>2</sup> and 54 fish/m<sup>2</sup>

14 ref

149 Singhal, B. K. and D. N. Sen.

(Botany Dept. University of Jodhpur, Jodhpur 342001).

A new method of weed control. Curr. Sci. 50(9):414-415.

Studied the weed control measures by using different herbicides - average diuron, RH-2915, tok E-25, weedazol and weedone. The present study reports the indirect way of weed control in the field of "chemical weed control".

Singh, N. K. (1980). (Post Graduate Department of Botany, 150 Bhagalpur University, Bhagalpur). Phytoplankton product vity of the river Ganges al Rajamahal. Nat. Acad. Sci. Letters, 3(12):359-360.

12 ref.

151 Singh, Rani & F.K. Talwar (1978).

... Pydration

152

(Zoological survey of India, Calcutta). On new species of silver belly, Leiognathus indicus Pisces: Leiognathidae from the Bay of Bengal. Bull. Zool. Surv. India 1(3): 275-277.

Singh, S.B. and R. Sahai (1979).

(Dept of Botany Gorakhpur University, Gorakhamp, (U.P.India) Study of some limnological features of Talwaria pond of Gorakhpur. Proc. Natn. Acad. Sci. India 49B(4): 207-215.

This study was conducted from July 1970 to June 1971 in relation to percentage frequency of some dominant macrephytes present in it. Internalationships observed amongst some of the physico-chemical factors have also been discussed.

153 Singh, S.F. (1978). (F.G. Dept. of Zoology, Magodh Univ. Bodh-Gaya, India). Structure and function of the mix offactory organs in a flat fish, Cynoglossus lingua (Ham.). J. Zool. Soc. India 30 (1&2): 43-46.

The mode of working of the accesory nasal sac and its role in effecting replacement of water has also been discussed.

9 ref.

Sinha, V.R.P. (1980). 154

(National Project Director, FAO/UNDP Project & Head, Freshwater Aquaculture Research and Training Centre, 624 Saheednagar, Bhubaneswar 751007 India). Hydration of female spawners of carps during hypophysation. Hydrobiologia, 72(1-2):193-196.

Female major carps which gained weight after injection of pituitary extract to induce spawning ovulated more successfully than those which did not. The gain in weight is due to induced hydration of the spawners.

3 ref.

155 Sinha, V.R.P. and M. Ranadhir (1980).

> (Freshwater Aquaculture Research and Training Centre, CIFRI, Bhubaneswar, Orissa, India). Potential and constraints of small scale freshwater fish culture enterprises in India. Proc. Indo-Pacifi Fish Council, 19th Session, Japan 21-30 May, 1980: 526-538

> > 7 ref

156 Sivaramakrishnan, A.S. (1981).

Industrial Consultancy Services. 27 Spinyagara ja Road, T. Nagar, Madras-17. Fish meal and fish oil plants in I) oc India.

Seafd. export J. 13(4):15-18.

157 Soota, T. D. and S. R. Dey Sarkar (1980).

(Soological Survey of India, Calcutta). On three species of the nematode genus Cucullanus Mucller 1977 and note on Lappetascaris lutjani Rasheed, 1965, from Indian marine fishes. Res. Zool. Surv. India 76(1-4): 1-6.

10 ref.

158 Srinivasan, M. and M.B. Raghunathan (1978).

(Sothern Regional Station, Zoological Seasonal periodicity of zooplankton in Ennore estuary, Madras during 1975 and 1976. Bull. Zool. Surv. India 1(2): 161-166.

3 ref.

159 Grivastav, Ajai K. al! Krishna Swarup (1980).

(Dept. of Zoology, University of Gorakhpur, Gorakhpur).

Serum calcium level of Heteropneustes fossilis (Telost) in response to calcitonin

treatment.

Nat. Acad. Sci. Letters 3(12):373-375.

There is no change in the serum calcium level of calcitonin (0.5 MRC unit/day) treated fish when compared to those of control specimens. 27 ref. 160 Srivastava, Neera (1980).

(Dept. of Zoology, Rajasthan University, Waipur, India).

Cyclic changes in the pituitary and

Cyclic changes in the pituitary and interrenal glands of Channa punctatus Bloch.

Proc. Nat. Acad. Sci. India 50B(1):43-46.

The cyclic changes in the pituitary and interrenal tissue of Channa punctatus Bloch have been studied. The relation of natural environmental factors and other endocrine glands to pituitary and interrenal activity has also been discussed.

161 Srivastava, R. C. (1980).

Botanical survey of India, Allahabad, 211002, India.
Fungal parasites of certain freshwater fishes of India.

Aquaculture 21(4): 387-392.

Twenty one isolates of saprolegniaceous fungi representing three genera, viz. Achlya, Aphanomeous and Saprolegnia were isolated from 19 different species of fishes. The pathogenicity of these isolates has been tested by conducting artificial inoculation experiments under controlled laboratory conditions using Anabas testudineus Bloch and Channa punctatus as test fishes.

162 Sundararaj V.F. Natarajan and M.D.K. Kuttulingam 1981
(Fisheries College, Tamil Nadu,
Agricultural University,
Tuticorin 628003)
Scope for mussel farming in brackish
waters.
Seafd.export J.13(3):21-23.

163 Sunarsan D. and P.J.Joseph (1975)

(Exploratory Fisheries Project,

Calcutta).

On the location of a potential prawn
fishing ground off the West Bengal

Coast.

J.mar.biol.Ass.India 17(2):247-250.

9 ref.

164 Sultan, Salim and S. Mahmood Khan (1981).)

(Section of Ichthyology and Fisheries Dept. of Zoology, Aligarh Muslim University, Aligarh 202001)

Studies on the fecundity of Barbus stigma (Cuv. and val)...

Curr. Sci. 50(7): p 335.

5 ref.

165 Talwar, P.K. (1978).

(Zoological survey of India, Calcutta).

Identify of the schizothoracid fish

genus

Heckel 1978, with considerations of the

status of Schizothoraichthys Misra 1962.

Bull. Zool. Surv. India 1(1):81-85.

The taxonommic position of the genus
Schizothorax Heckel 1838, has long been in a state
of uncertainty. Its systematic position is elucidated
and the genus is diagnosed on thebasis of its valid
type species.

34 ref.

1 - Line Land Land

Talwar, P.K. and P.Mukerjee 1978. (Zoological survey of India, Calcutta). 166 Record of the crocodile fish, Gargariscus prionocephalus (Dumeril) in Indian waters. Agood Bull. Zool. Surv. India, 1(1):p 91.

Tandon, K. K. (1980). (Dept. of Zoology, Punjab University, 167 Chandigarh-160014, India). A note on the fisheries of Budha Nalla. Pb. Fish. Bull, 4(1): 27-29.

14 ref

Theruvengadathan A (1975). 168 (Main Meteorological office, Bombay, Airport, Bombay 29) 1.2 but miles. Studies on some aspects of the incidence of cyclonic storms vis-a-vis sea tem-

perature distribution over the Arabian अंगारीय के अंगारी Sea.

id. Din.

J. mar. biol. Ass. India 17(e): 41-48.

The cyclonic storms inthe Arabian sea show two maxima in May and November with minimum activity in August. This is shown to be closely related to the changes in sea temperature conditions over the Indian seas in association with the south west monsoon. The temperature conditions over the Arabian Sea generally inhibit the intensification of westerward moving storms, many of them actually dissipating over the sea.

17 Bef.

169 Tilak, Raj (1978). (High altitude Zoology Field Station, Zoological survey of India, Solan). Redescription of Hara hara (Hamilton) and Hara Horai Misra with a key to the species of Hara blyth (Pisces: Sisoridac). Bull. Zool. Surv. India 1(3):295-301.

170 Toor, H. S. and K. S. Chauhan (1977).

(Dept. of Zoology, Punjab Agricultural
University, Ludhiana.)
Absence of the pelvic fins in the scale
carp Cyprinius carpio communis Linnaeus.
Res. Bull. Panjab Univ. 28 (3-4):211-212.

12 ref.

171 Toor, H.S. and K.S. Chauhan (1977).

(Dept. of Zoology, Punjab Agricultural
University, Ludhiana).

Occurrence of stomach in Mirror carp

Cyprinus carpio specularis.

Res. Bull. Panjab Univ. 28 (1-3): 201-203.

16 ref.

172 Trivedy R.K. and Brij Gopal (1981)

(Dept. of Pollution, Science College,
Karad 415010).

Seasonal changes in growth and mineral
composition of water hyacinth (Eichhornia
crassipes).

Acta Limnol.Indical(1):41-44.

12 ref.

173 Trivedy R.K. and P.K. Goel (1981).

(Dept. of Botany University of E

(Dept. of Botany University of Rajasthan, Jaipun 302004).

Studies on primary production of Ceratophyllum demersum.

Acta Limnol Indical(1):25-27.

C. demersum growing in a shallow pond near Jaipur gave a net primary production value of 173.2 g/m² and the maximum growth rate (3.82 g/h²)dny) in September, 1977.

Thagi, A.P. (1980). (Dept. of Zoology), D. A. V. College, 174 Muzaffarnagar). Apparatus to measure rate of water expulsion in Potamonid crabs. Nat. Acad. Sci. Letters 3(5): P167.

Varghese, P. Oommen (1975). 175

(Integrated Fisheries Project, Cochin 682016) [ 1

New records of decapod cephalopods from the Arabian Sea.

J. mar. biol. Ass. India 17(2): 186-190.

Three new species of decapod cephalopods from the Arabian Sea are described.

Vasisht, H. S. and S. K. Battish (1974). 176

(Dept. of Zoology, Panjab University, Chandigarh).

The crustacean fauna of North India. Res. Bull. Punjab Univ. 25 (3-4):219-220.

16 species of crustaceanus have been recorded from Chandigarh and Patiala (India) and listed in this paper. . (1861) . Areador

177 Yadav, R. N. S. and H. S. Biswas (1981).

. Tellstages for vitages on i apagent to

(Central Institute of Agricultural Engineering Babi Bagh Berasia Road, Bhopal.)

Improved tools and implements for weed control.

Indian fmg. 30(10): 31-32.

Described the tools for mechanical

weeding.

178 Yazdani, G. M. (1978).

179

(Zoological Survey of India, Central Regional Station, Jabalpur). Adaptive radiation in the mastacembeloid fishes.

Bull. Zool. Surv. India 1(3):279-290.

The modifications of various characters such as body, head, scales, spines, snout, jaws, pectoral girdle, candal fin skeleton, vertebrae and alimentary canal have been traced out in three families of mastacembelid, fisheries. It is concluded that all have evolved from sume periciform fish.

- Zutshi, D. P., B.A. Subla M.A. Khan and Ashwani Wanganeo (1980).
  - 1 Centre of Research for Development Kashmir University, Sringar, India.
  - 2 Hydrobiology, Laboratory, Sri Pratap College Srinagar, Kashmir, India.
  - 3 Department of Botany University of Jos, Nicola, Comparative limnology of nine lakes of Jammu and Kashmir Himalayas.

    Hydrobiologia, 72(1-2):101-112.

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Indian J. Environ, H1th, 1980, 22(4)  Indian Seafd. export J. 1981, 13(1)  J. Agri. Sci. Res. 1978, 20(1)  J. Indian bot. Soc., 1980, 59  J. mar. biol. Ass. India, 1975, 17(2)	45 ••• 49 ••• 40 ••• 80
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                            3(12)
                                              150,159
deoyajaya ed. by F. Ghosh, Calcutta 1) 21 0001, (2) 2001 1210 1
Chabbish Pargana Fish Producers
                                       Association, 1980
Pb. Fish. Bull. 1980 4(1)
                                   (11) 3. . . . . 7.4,31,136,167.2
The Philipine Journal of Fisheries, 1) 11
                1978, 16(1)
                                    (1)1.1. 38111
                                    (3)
Proceedings of the Iclarm. Scarca
Conference on Integrated
Agricul ture- Aquaculture Farming
                                   Sammer Inchittibe on Heart
Systems, Manila, Philpipines, 6-9
                                   August, 1979
Proc. Indo-Pacif. Fish: Council, 19th
Session, Kyoto, Japan, 21-30 May, 1980
Proc. Indian natn. Sci. Acad(B), 198046(2)... 131
                                  46(4)...
    69,71,72,11
                                  46(5)...
                                              27
                                  46_
                                              128
                         Supplement
```

	· · · · · · · · · · · · · · · · · · ·
(3)	18,113
Nat-Acad-Sci-India	28,31,37,152
Proc. Nat. Acad. Sci. India(B)	20,51,51,
	(A) LI 160 1 TELLER MARKET
1980, 50 (1)	(·•) 14, 157
Boo Zool Surv India, gol	58,134
77(1-4)	52; 176
1974.25(3-4)	52,470
Res. Bull. Panjab Univ. 1974, 25(3-4)	171
	53,170
1977, 28 (3-4)	142
29(1-40) 30(1-4)	• • •
30(1-4)	54,55
	a programme -
The Indian Journal	7,130
Sankhya. The Indian Journal of Statistics(A), 1980 42(Fts 1&2)	Charlot sh Tan Other Park
of Statistical 47(2)	das 140 maids board
Sci & Cult. 1901, 22	(19: 19,64m. dell. de
Seafd. export, J. 198012(11)	75 105
1 <u>2</u> (12)	75, 105 Hard 1911
1981,13(1)	1. ser 47
13(3)	Agrical de 156 no de la como de l
13(4)	Agricul ture 21, 36 ut
Common Institute on Brackishwater	MACH IN MA
Barrackpore 3 July-2 August, 1980.	0.0011.1211.11.10.10.20
Development.	and the state of t
Barrackpore 3 July-2 August, 1980.  Tropical Ecology and Development.  Proceedings of the Vth International	30 44 59
Proceedings of the Vth International Symposium of Tropical Ecology 16-21	69.71.72.114
7	37,1.1
ra(6)	
(1)2(1)(1)2(1)	

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